Notice of Allowability	Application No.	Applicant(s)	
	09/931,302	ATKIN, STEVEN EDWARD	
	Examiner	Art Unit	
	Marc R Filipczyk	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment of 6/14/04 and tel. interview of 11/18/04*.

2. ☒ The allowed claim(s) is/are *1-3,5-7,9-11 and 13-15*.

3. ☒ The drawings filed on *16 August 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *11/18/04*.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

SAFET METJAHIC
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Response to Amendment

This action is responsive to Applicant's response filed on June 14, 2004 wherein amended claims 1-12 are pending.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert H. Frantz on November 17 and 18, 2004.

Section I:
Amendment under 37 CFR §1.121 to the
Claims

Claim 1 (currently amended):

A computer method for normalizing two or more encoded text data strings, ~~said encoded text data strings being expressed as a series of characters and meta data fields, said meta data fields containing all information regarding higher order control, formatting and display for the characters,~~ said method comprising the steps of:

receiving at least two strings in meta normal form ~~for comparison~~, said strings being expressed as a series of characters and meta data fields, said meta data fields containing glyph information for said characters in said strings;

determining whether ~~both or~~ all of the strings are in a ~~same~~ decomposed meta normal form or a precomposed meta normal form;

responsive to determining that at least one received string is in a different meta normal form from at least one other received string ~~said strings are not in a same meta normal form~~, converting one or more strings to a selected meta normal form such that all strings are in a same decomposed or precomposed meta normal form ~~forms~~;

removing said meta data fields from said received and converted strings to yield pure strings devoid of embedded glyph information; and

~~comparing said strings to each other on a character-by-character basis and~~

~~ignoring meta-data-fields in each string during said step of comparing; and~~

~~determining~~ producing a result code indicating that said pure strings are not equivalent if said pure strings do not match by comparing on a character-by-character basis, otherwise outputting said pure string ~~if said step of comparing yields a match~~ .

Claim 2 (original):

The method as set forth in Claim 1 wherein said step of converting comprises converting at least one string to Normal Form Meta Decomposed form.

Claim 3 (original):

The method as set forth in Claim 1 wherein said step of converting comprises converting at least one string to Normal Form Meta Composed form.

Claim 4 (canceled).

Claim 5 (currently amended):

A computer readable medium encoded with software for normalizing two or more text data strings, ~~said text data strings being expressed as a series of characters and meta data fields, said meta data fields containing all information regarding higher order control, formatting and display for the characters,~~ said software causing a computer to perform the following actions:

receive at least two strings in meta normal form ~~for comparison~~, said strings being expressed as a series of characters and meta data fields, said meta data fields containing glyph information for said characters in said strings;

determine whether all of the strings are in a ~~same~~ decomposed meta normal form or a precomposed meta normal form;

responsive to determining that at least one received string is in a different meta normal form from at least one other received string ~~said strings are not in a same meta normal form~~, convert one or more strings to a selected meta normal form such that all strings are in a same decomposed or precomposed meta normal form ~~forms~~;

remove said meta data fields from said received and converted strings to yield pure strings devoid of embedded glyph information; and

~~compare said strings to each other on a character-by-character basis and ignoring meta data in each string during said step of comparing; and~~

~~determine~~ produce a result code indicating that said pure strings are not equivalent if said pure strings do not match by comparing on a character-by-character basis, otherwise outputting said pure string ~~if said step of comparing yields a match~~ .

Claim 6 (original):

The computer readable medium as set forth in Claim 5 wherein said software for converting one or more strings to a similar meta normal form comprises software for converting at least one string to Normal Form Meta Decomposed form.

Claim 7 (original):

The computer readable medium as set forth in Claim 5 wherein said software for converting one or more strings to a similar meta normal form comprises software for converting at least one string to Normal Form Meta Composed form.

Claim 8 (canceled).

Claim 9 (currently amended):

A system for normalizing two or more encoded text data strings, ~~said encoded text data strings being expressed as a series of characters and meta data fields, said meta data fields containing all information regarding higher order control, formatting and display for the characters,~~ said system comprising:

a meta form checker ~~comparitor~~ for determining ~~whether both or all of the~~ if a plurality of strings in meta normal form are in a ~~same~~ decomposed meta normal form or a precomposed meta normal form, said strings being expressed as a series of characters and meta data fields, said meta data fields containing glyph information for said characters in said strings;

a meta form converter ~~adapted to~~ for converting one or more strings to a selected meta normal form such that all strings are in a same decomposed or precomposed meta normal ~~forms~~ form if ~~responsive to a determination by~~ said meta form checker indicates ~~comparitor~~ that ~~said strings~~ at least one string is in a different meta normal form from at least one other string ~~are in a same meta normal forms~~;

a glyph remover for removing said meta data fields from said plurality of strings and converted strings to yield pure strings devoid of embedded glyph information; and

~~a string content comparitor for comparing said strings to each other on a character-by-character basis and ignoring meta data fields in each string; and~~

an equivalency evaluator for ~~signaling~~ producing a result code indicating that said strings are not equivalent if said pure strings do not match by comparing on a character-by-character basis, otherwise outputting said pure string ~~if said string content comparitor indicates a character-by-character match is found~~ .

Claim 10 (original):

The system as set forth in Claim 9 wherein said meta form converter is adapted to convert a string to Normal Form Meta Decomposed form.

Claim 11 (original):

The system as set forth in Claim 9 wherein said meta form converter is adapted to convert a string to Normal Form Meta Composed form.

Claim 12 (canceled).

Claim 13 (new):

The method as set forth in Claim 1 wherein said received strings comprise meta normal form encoded Unicode strings.

Claim 14 (new):

The computer readable medium as set forth in Claim 5 wherein said received strings comprise meta normal form encoded Unicode strings.

Claim 15 (new):

The system as set forth in Claim 9 wherein said meta form comparitor is adapted to compare meta normal form encoded Unicode strings.

Section II:
Amendment under 37 C.F.R. §1.121
to the **Specification**

In the Specification, please amend paragraph [0037] to read as follows:

[0037] Therefore, there is a need in the ~~are~~ art for a system and method for normalizing encoded text data such as Unicode data. This new system and method should be capable of normalizing all text within a given text encoding scheme or standard, while at the same time not being bound to any specific version of the encoding standard.

In the Specification, please amend paragraph [0066] to read as follows:

[0066] The NFMD and NFMC are easily detectable and fully reversible. Text processes still retain the ability to use whichever local encoding is most appropriate for the task at hand. In these two new meta normal forms, all Unicode characters are directly mappable, and there is no limitation on which characters can and can not be used.

In the Specification, please amend paragraph [0067] to read as follows:

[0067] Additionally, these new meta formal forms only need to be used when text processes wish to interchange text or determine when sequences are identical. This approach allows text components to be both liberal in what they send and receive.

In the Specification, please amend paragraph [0072] to read as follows:

[0072] It is possible to convert the NFMC data in Table 5 into NFMD. In this example, the accented "e" is represented using the two character sequence " e' ". When data in NFMC and NFMD are compared, the data in NFMC must first be converted into NFMD. Fortunately, there are few cases in which it becomes

> necessary to do this (use of Arabic or Hebrew vowel marks). Using these meta normal forms (e.g. NFMC and NFMD), however, greatly simplifies the normalization process and enables the transmission of data without a loss of semantics.

In the Specification, please amend paragraph [0079] to read as follows:

> [0079] Turning to Figure 4, the logical process (40) of the Meta Normalization method is shown. Two metadata encoded text strings (42) are received (41) for determination whether they are equivalent in content or not. They are checked (43) to see if they are in the same meta normal form, e.g. either Normal Form Meta Decomposed (NFMD) or Normal Form Meta Precomposed (NFMC) meta normal form. If they are not in the same meta normal form (e.g. if at least one string is in NFMD and at least one string is in NFMC), then one string is selected and converted (44) to the meta normal form of the other string.

Allowable Subject Matter

Amended claims 1-3, 5-7, 9-11 and 13-15 are allowable over the prior art of record, renumbered as claims 1-12, respectively.

The following is an Examiner's statement of reasons for allowance:

Claims 1, 5 and 9 are allowable because the prior art of record or that encountered in searching for the invention, fails to disclose or suggest a system for normalizing encoded text strings, said strings expressed as a series of characters and meta data fields containing glyph information about the characters, by using a meta form checker to determine if all the strings are in a decomposed or precomposed meta normal form, a meta form converter for yielding all the strings in the same meta normal form, and a glyph remover for yielding pure strings devoid of embedded glyph information, as claimed in addition to the other claim provisions.

Claims 2, 3, 6, 7, 10, 11 and 13-15 depend from claims 1, 5 and 9 respectively, and are therefore allowable.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to illustrate the state of art with respect to normalization and encoded text data strings:

U.S. Patent No. 6,055,365 of Tye

U.S. Patent No. 5,883,986 of Kopec et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R Filipczyk whose telephone number is (571) 272-4019. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF
November 19, 2004

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